



# Energy Data Overview

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January 29<sup>th</sup>, 2016

Energy Resources Management Board  
Emergency Support Function – 12 – Energy Supply  
Kentucky Emergency Management Operations Center

Kentucky Energy and Environment Cabinet  
Department for Energy Development and Independence

[energy.ky.gov](http://energy.ky.gov)

# Kentucky Energy Profile

5th Edition • 2015



Kentucky Energy and Environment Cabinet  
Department for Energy Development and Independence

[energy.ky.gov](http://energy.ky.gov)

**Download at:**

<http://energy.ky.gov/Pages/Profile.aspx>

**Purpose:**

Comprehensive Report on Energy Production, Energy Consumption, and Energy Dynamics within the Commonwealth of Kentucky

**Contains:**

- Energy Commodity Prices and Expenditures
- Energy Production and Consumption
- Energy Consumption, Expenditures, and Intensity by Sector
- Electricity Generation, Consumption, Prices, Generation Infrastructure, Rates, and Service Areas
- Profiles of Electricity Utilities in Kentucky
- Profiles of Coal-Fired Power Plants in Kentucky
- Coal Production and Consumption
- Natural Gas Consumption and Production
- Crude Oil Production and Liquid Fuel Consumption
- Renewable Energy Production, Generation, and Potential

# Kentucky Coal Facts

15th Edition • 2015



*Produced by the*  
Kentucky Energy and Environment Cabinet  
Department for Energy Development and Independence

*In Partnership with the*  
Kentucky Coal Association

energy.ky.gov  
kentuckycoal.com

## Download at:

<http://energy.ky.gov/Pages/CoalFacts.aspx>

## Purpose:

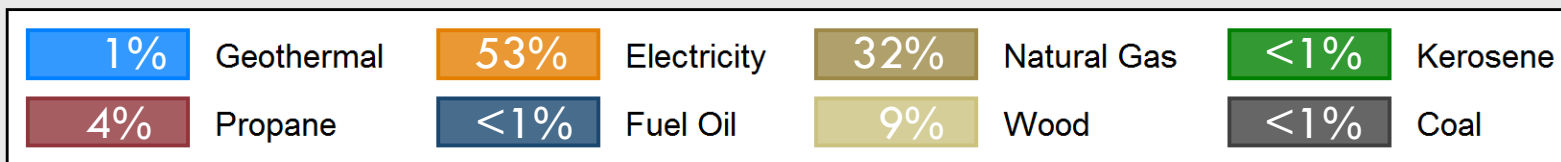
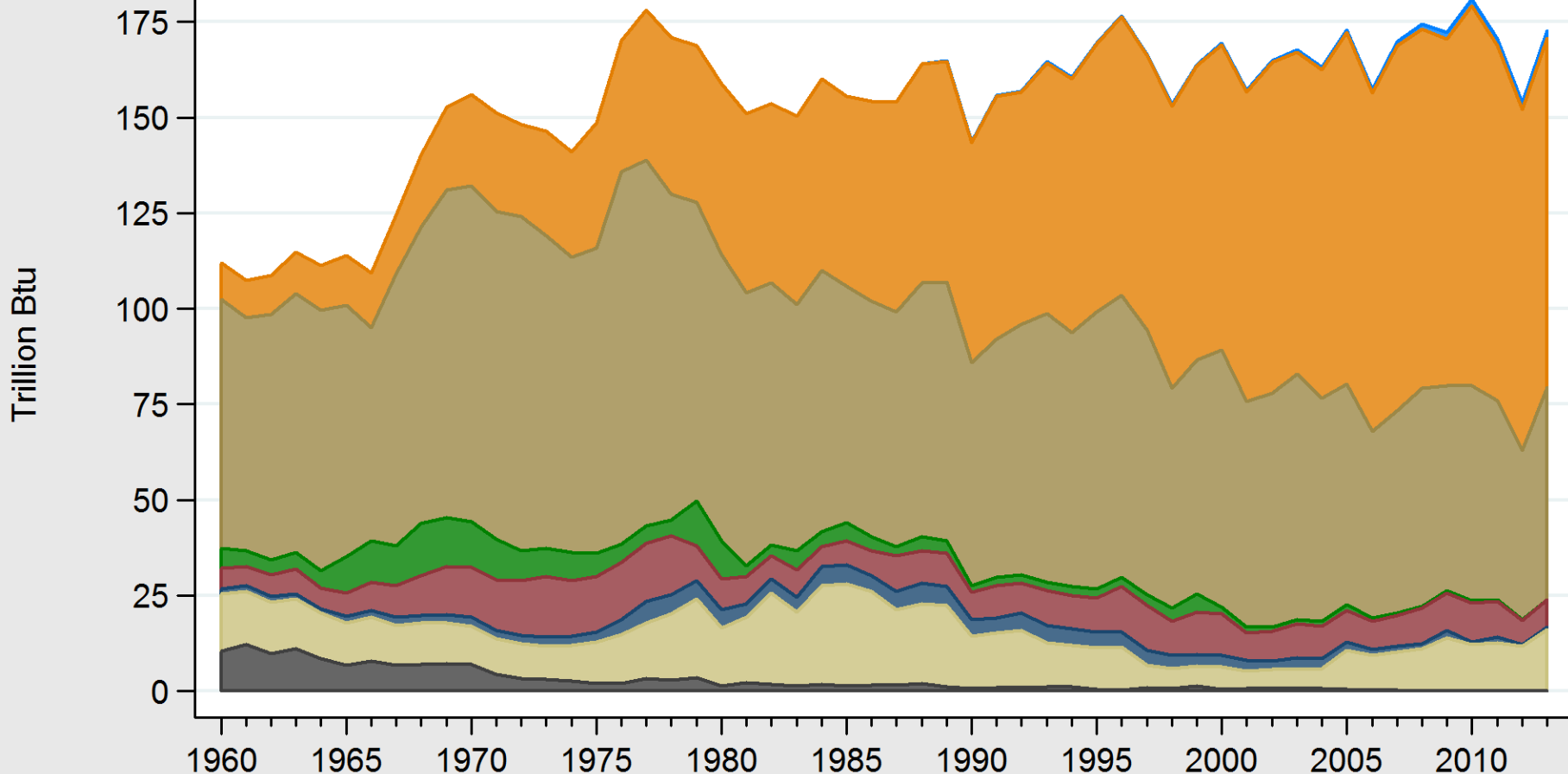
A detailed overview of the coal industry in Kentucky, focusing on mining and production, employment, and the markets for Kentucky coal.

## Contains:

- Coal Production
- Mining Employment and Productivity
- Severance Revenue, Coal Prices, and Chemical Properties
- Coal Distribution and Markets
- Electricity Generation, Emissions, and Prices
- History of Coal in Kentucky
- Mine Safety, Licensing, and Reclamation
- County Level Production, Employment, and Markets

# Kentucky Residential Energy Consumption by Fuel, 1960-2013

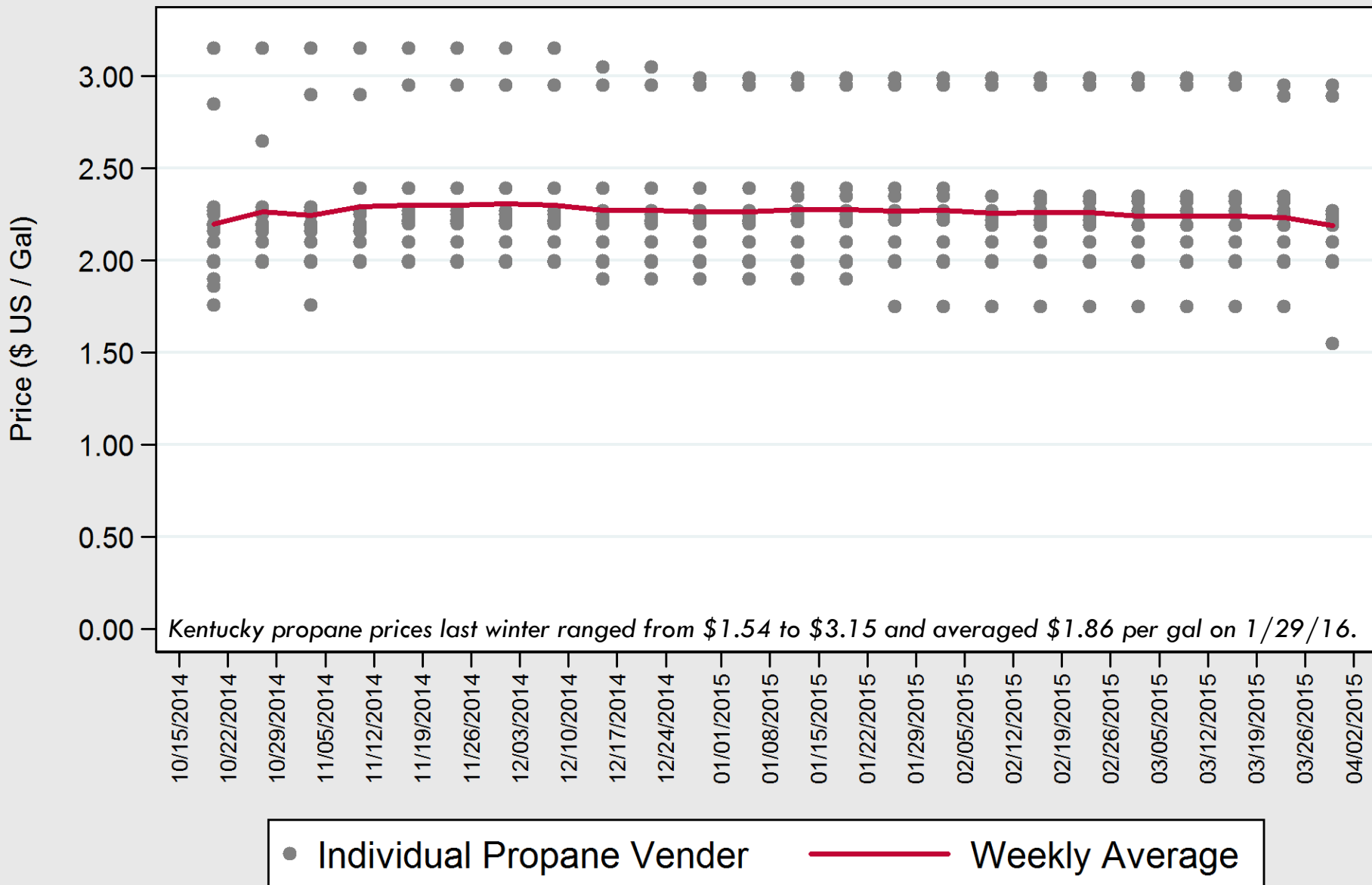
*Residential energy consumption has grown little since the late 1970s. Electricity has grown, natural gas has declined.*



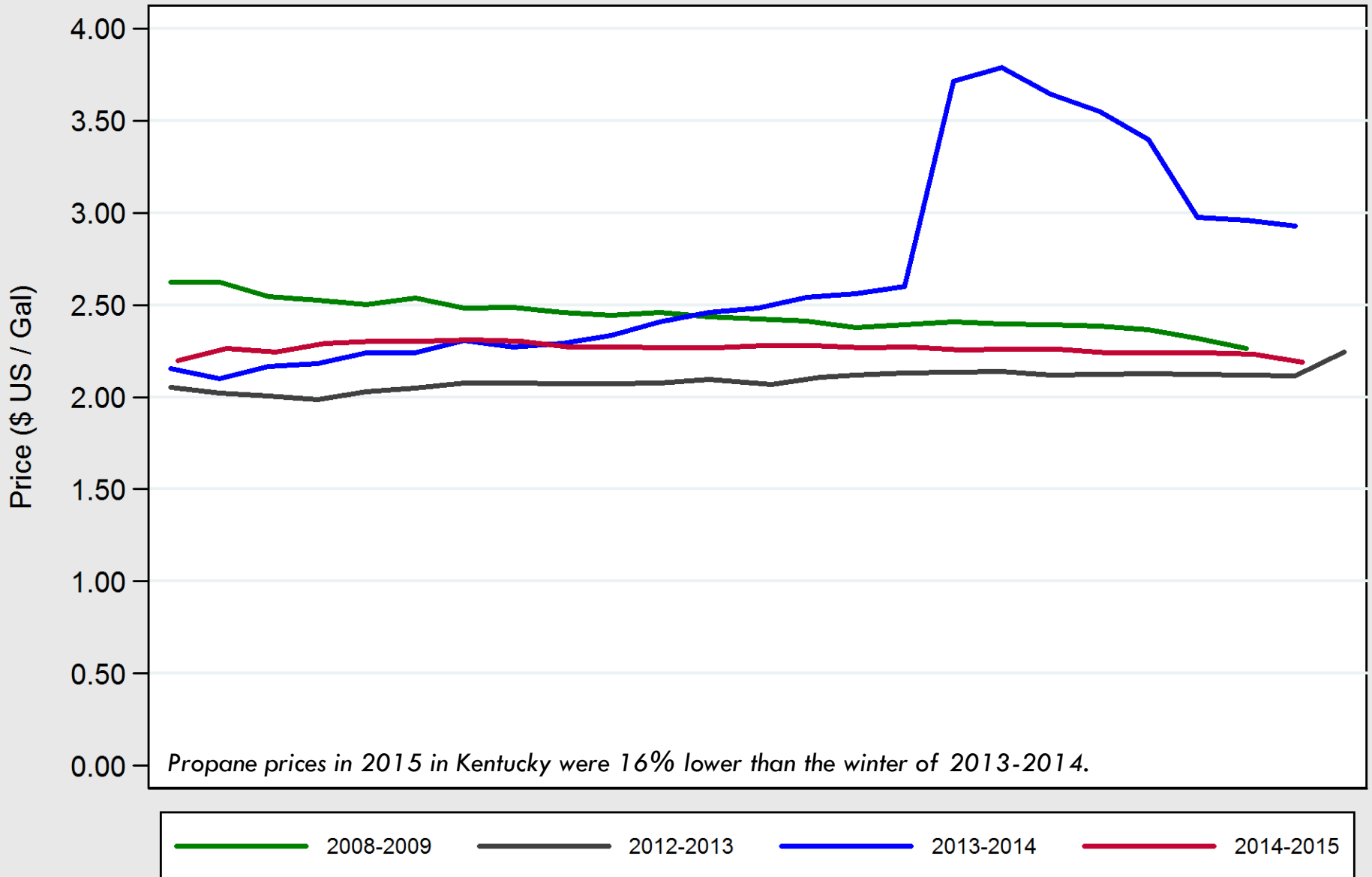
Kentucky Energy Database, EEC-DEDI, 2015

Data Source: EIA-SEDS

## Kentucky Propane Prices, Winter 2014-2015



## Kentucky Propane Prices, Winters 2008-2015



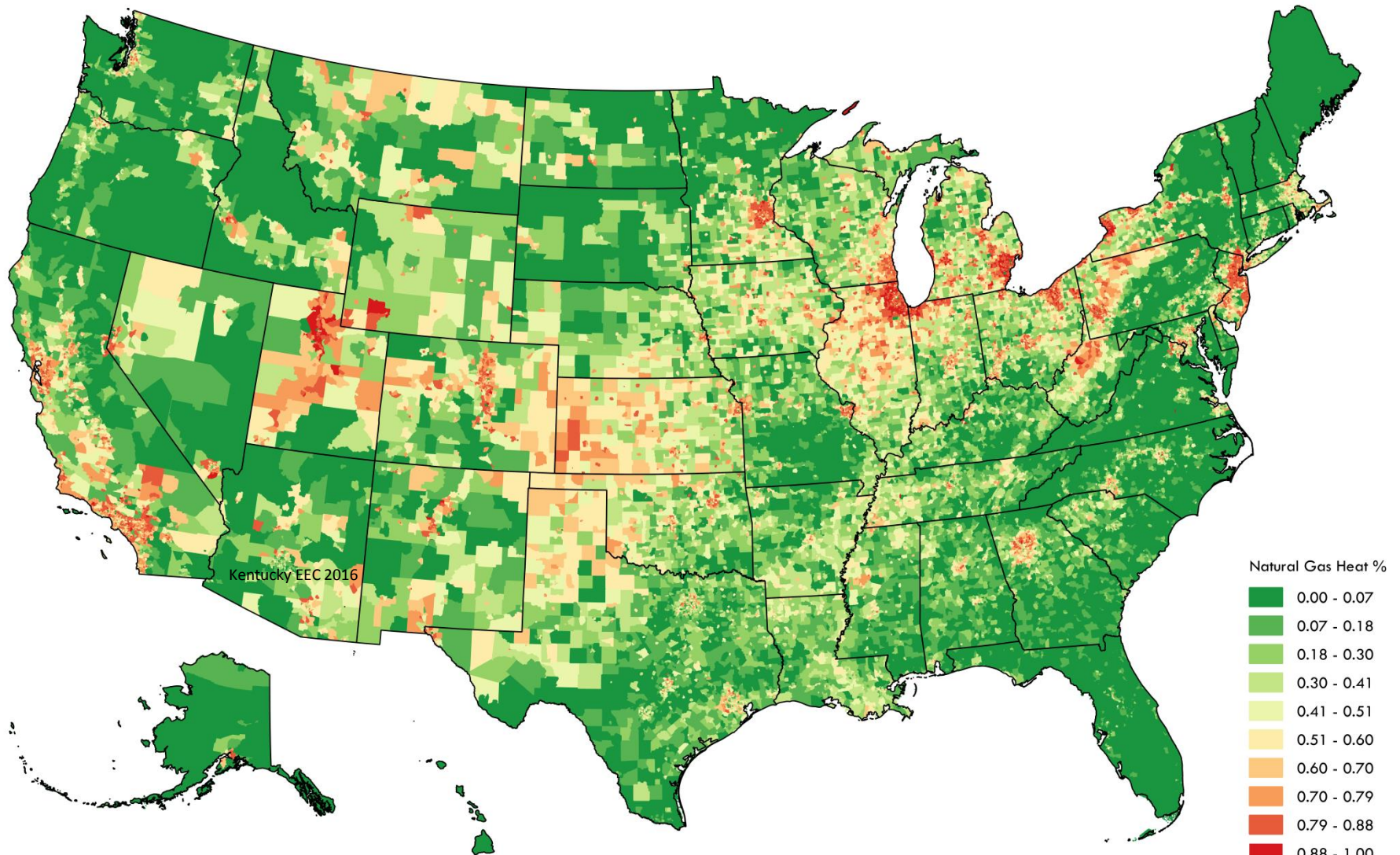
# Map of Kentucky Propane Storage Tanks, 2016

*Confidential information has been deleted. Please direct all inquiries to 502-564-7192.*

**CONFIDENTIAL**



# United States Natural Gas Use for Home Heating, 2014



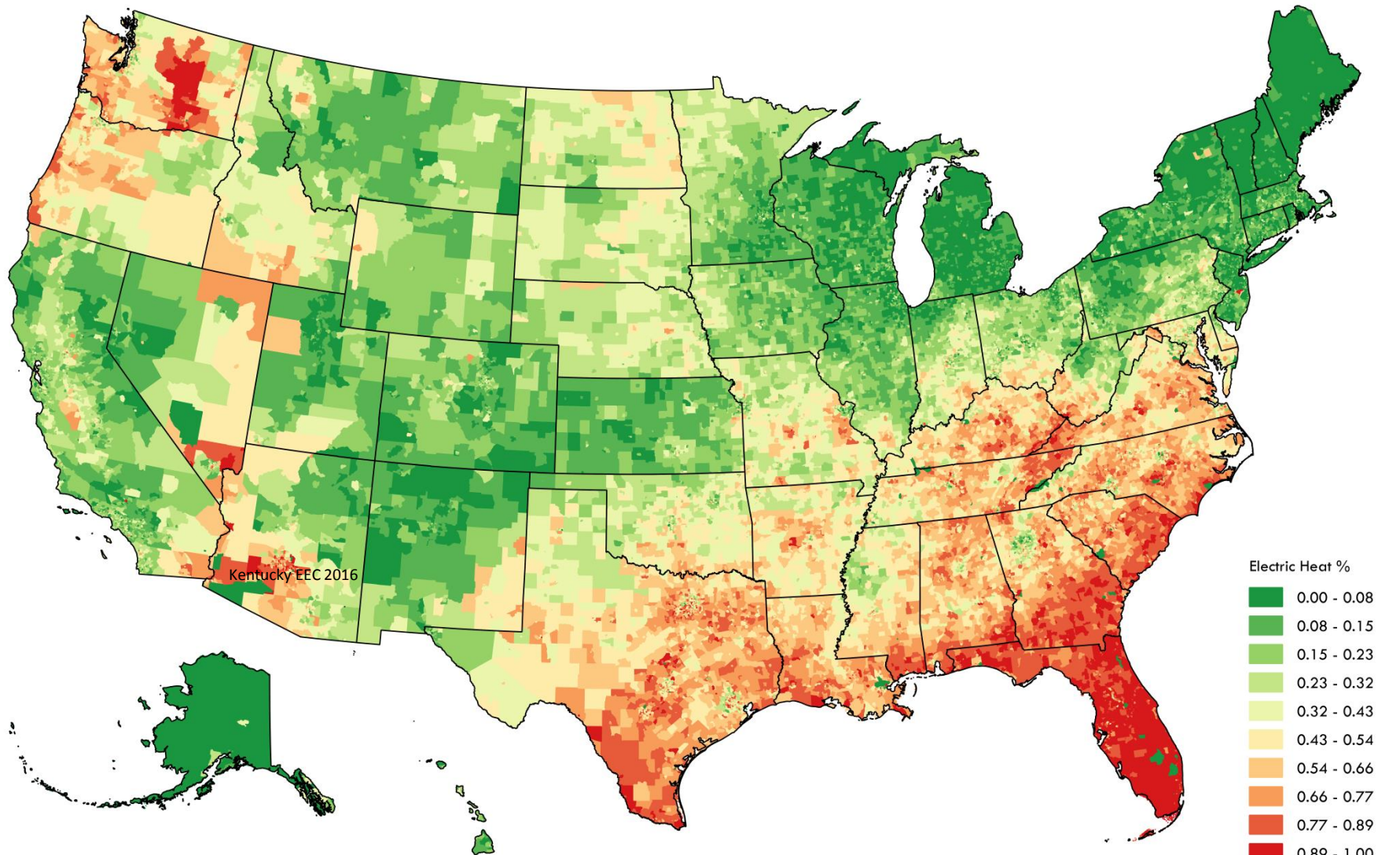
Data Source: United States Census Bureau, American Community Survey

Kentucky Energy Database, EEC-DEDI, 2015

**56.8 Million (49%) of American Families Heat with Natural Gas**



# United States Electricity Use for Home Heating, 2014

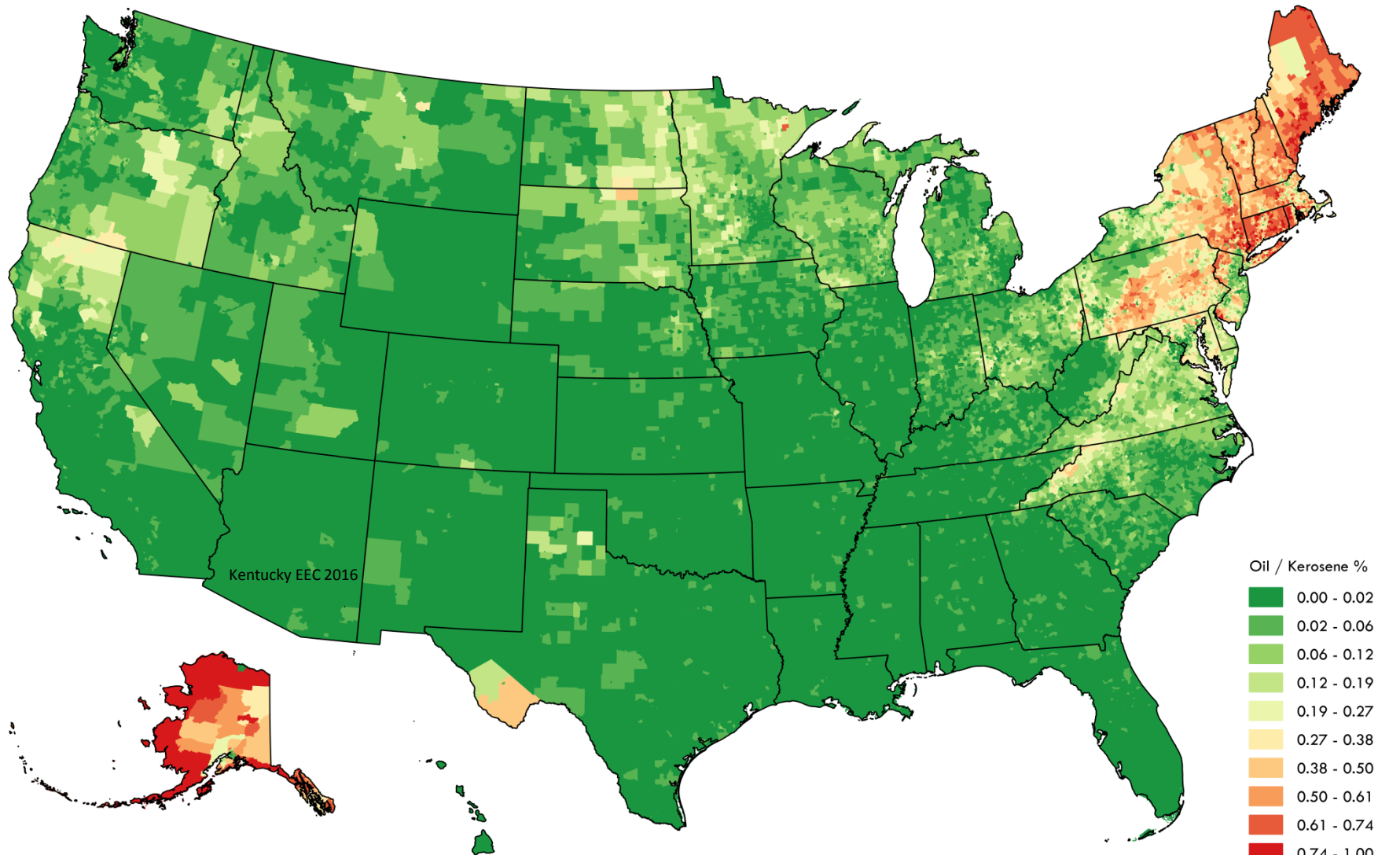


Data Source: United States Census Bureau, American Community Survey

Kentucky Energy Database, EEC-DEDI, 2015

42.6 Million (37%) of American Families Heat with Natural Gas

# United States Fuel Oil & Kerosene Use for Home Heating, 2014



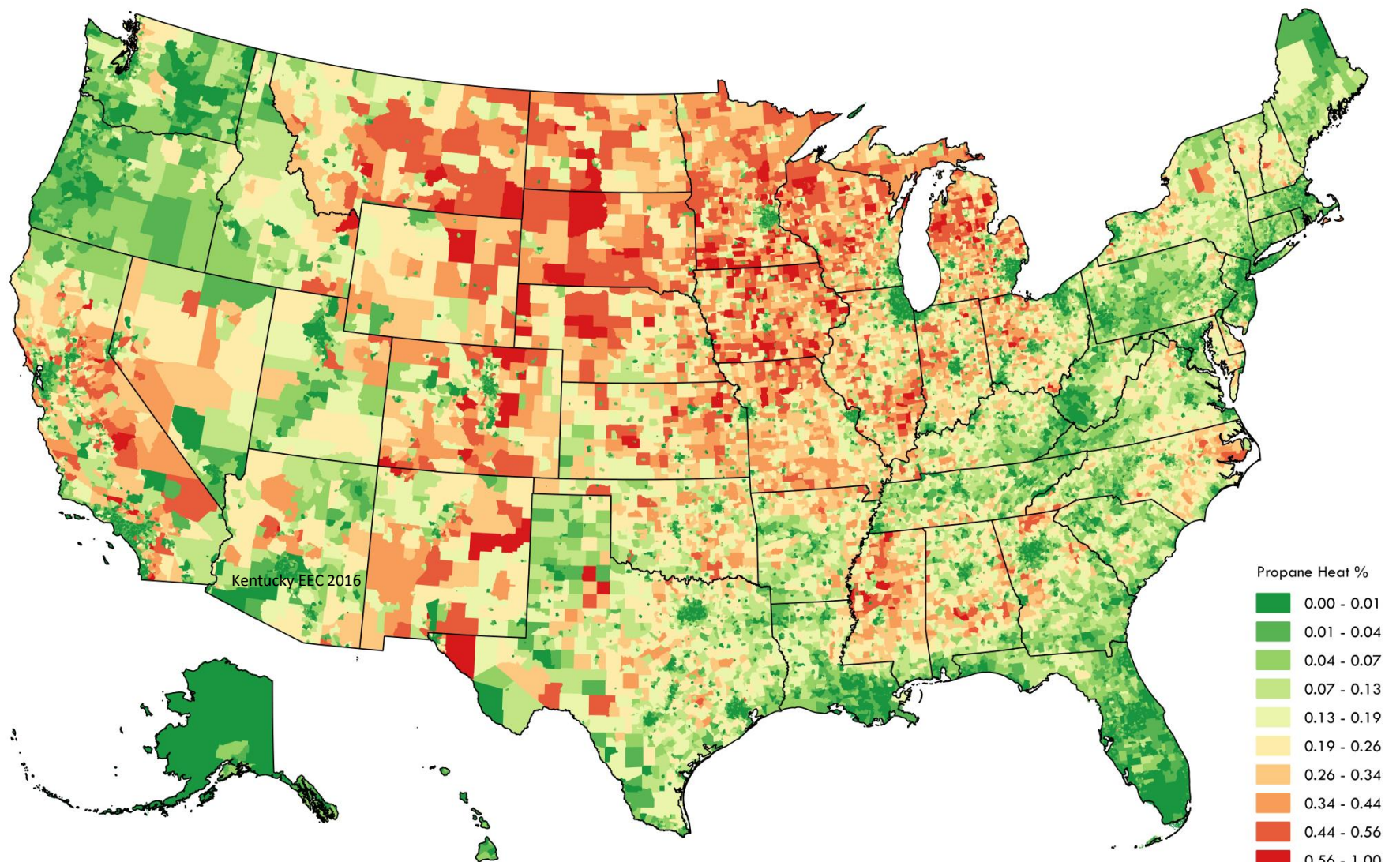
Data Source: United States Census Bureau, American Community Survey

Kentucky Energy Database, EEC-DEDI, 2015

6.8 Million (6%) of American Families Heat with Fuel Oil or Kerosene



# United States Propane Use for Home Heating, 2014



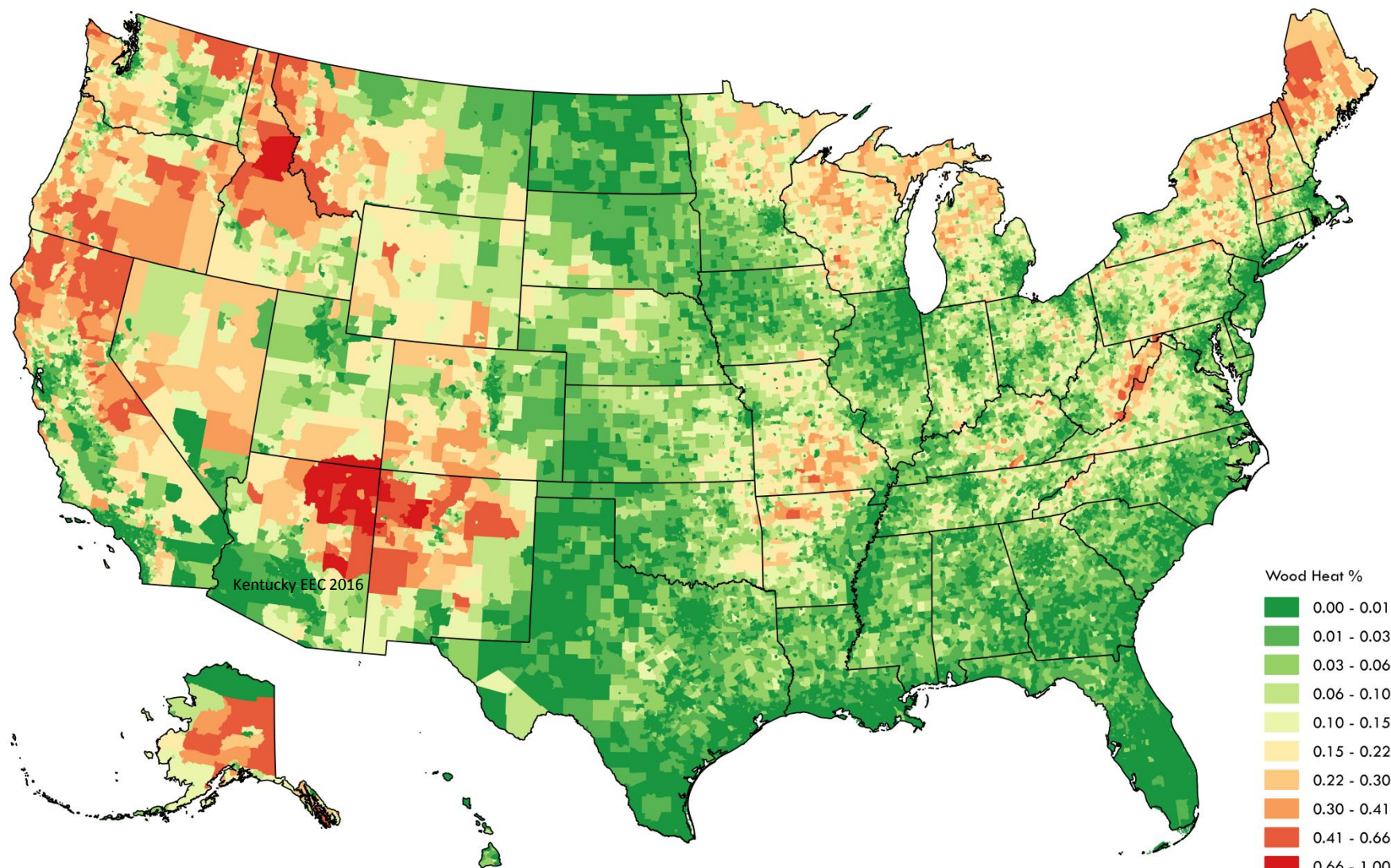
Data Source: United States Census Bureau, American Community Survey

Kentucky Energy Database, EEC-DEDI, 2015

**5.6 Million (4.9%) of American Families Heat with Propane**



# United States Wood Use for Home Heating, 2014



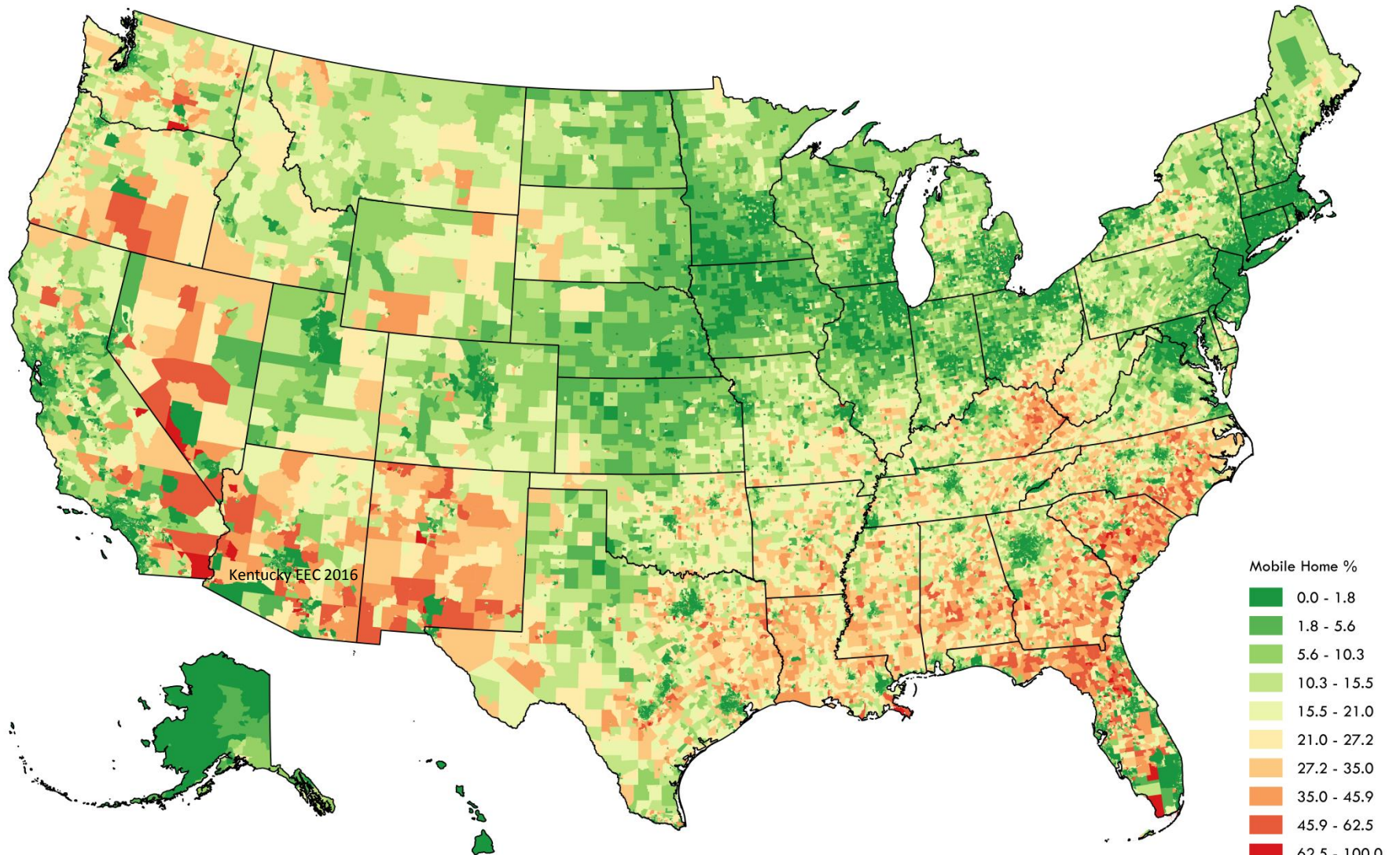
Data Source: United States Census Bureau, American Community Survey

Kentucky Energy Database, EEC-DEDI, 2015

2.5 Million (2.1%) of American Families Heat with Propane



# United States Mobile Home, 2014



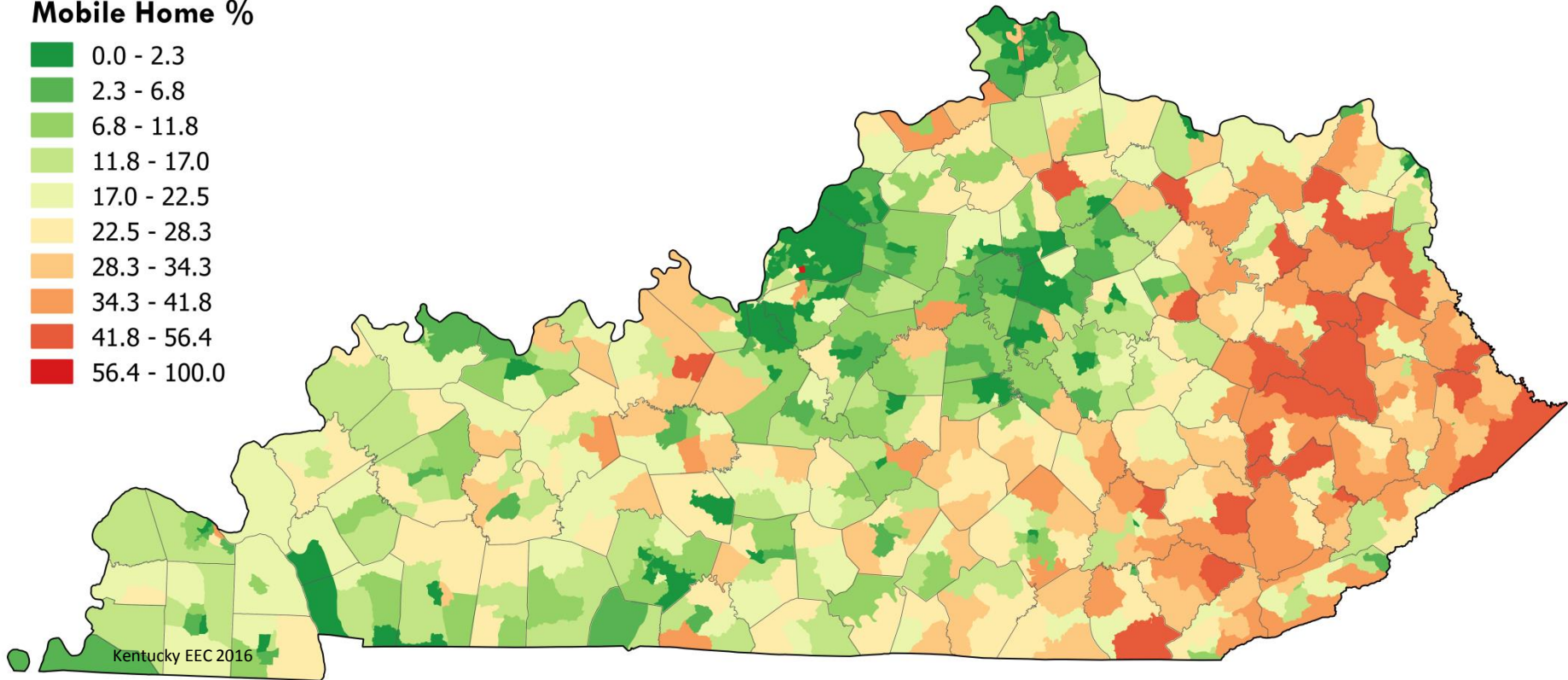
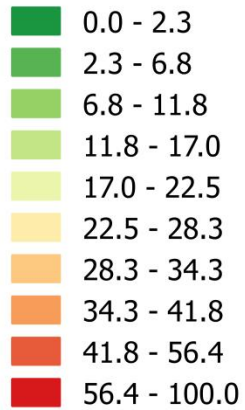
Data Source: United States Census Bureau, American Community Survey

Kentucky Energy Database, EEC-DEDI, 2015

8.1 Million (7%) of American Families Live in Mobile Homes

# Kentucky Mobile Homes, 2014

## Mobile Home %

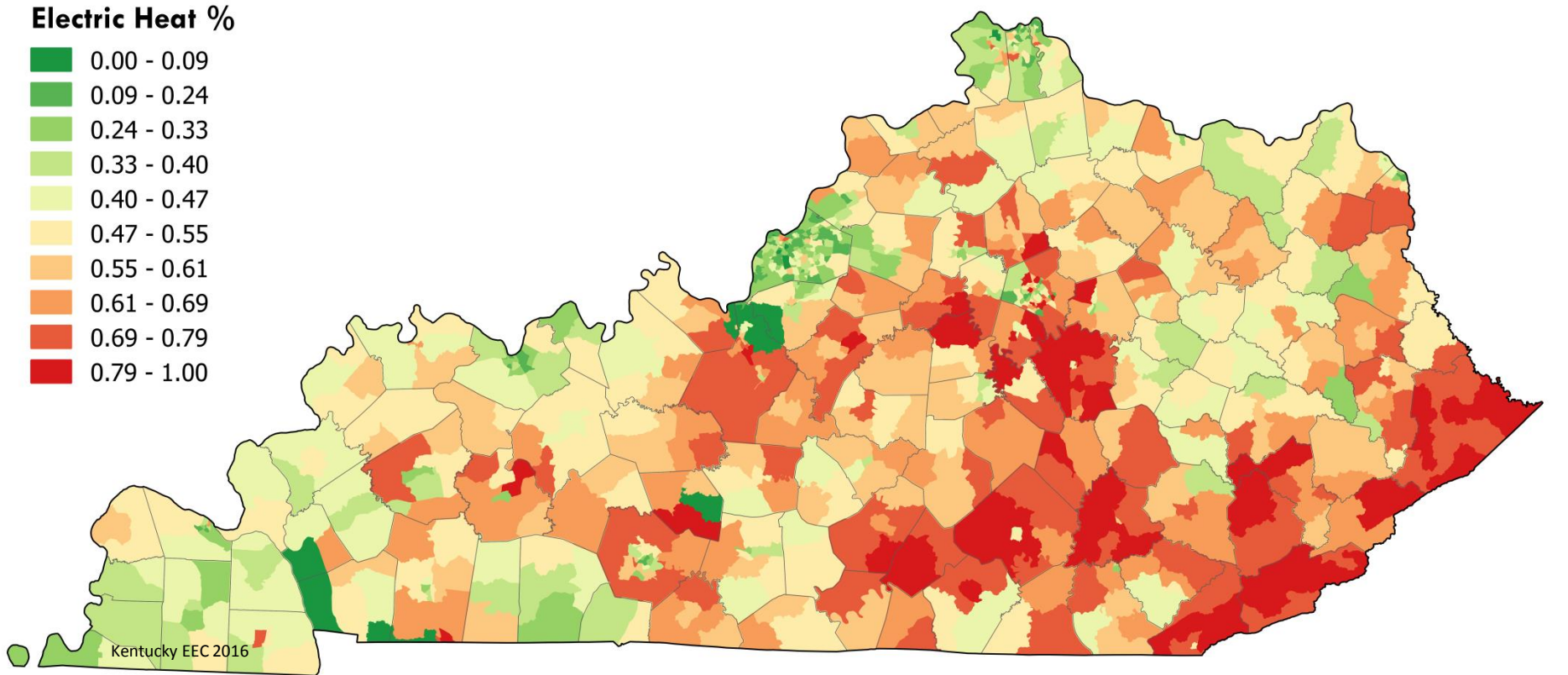


Kentucky Energy Database, EEC-DEDI, 2016

251,753 (13%) of Kentucky Families Live in Mobile Homes



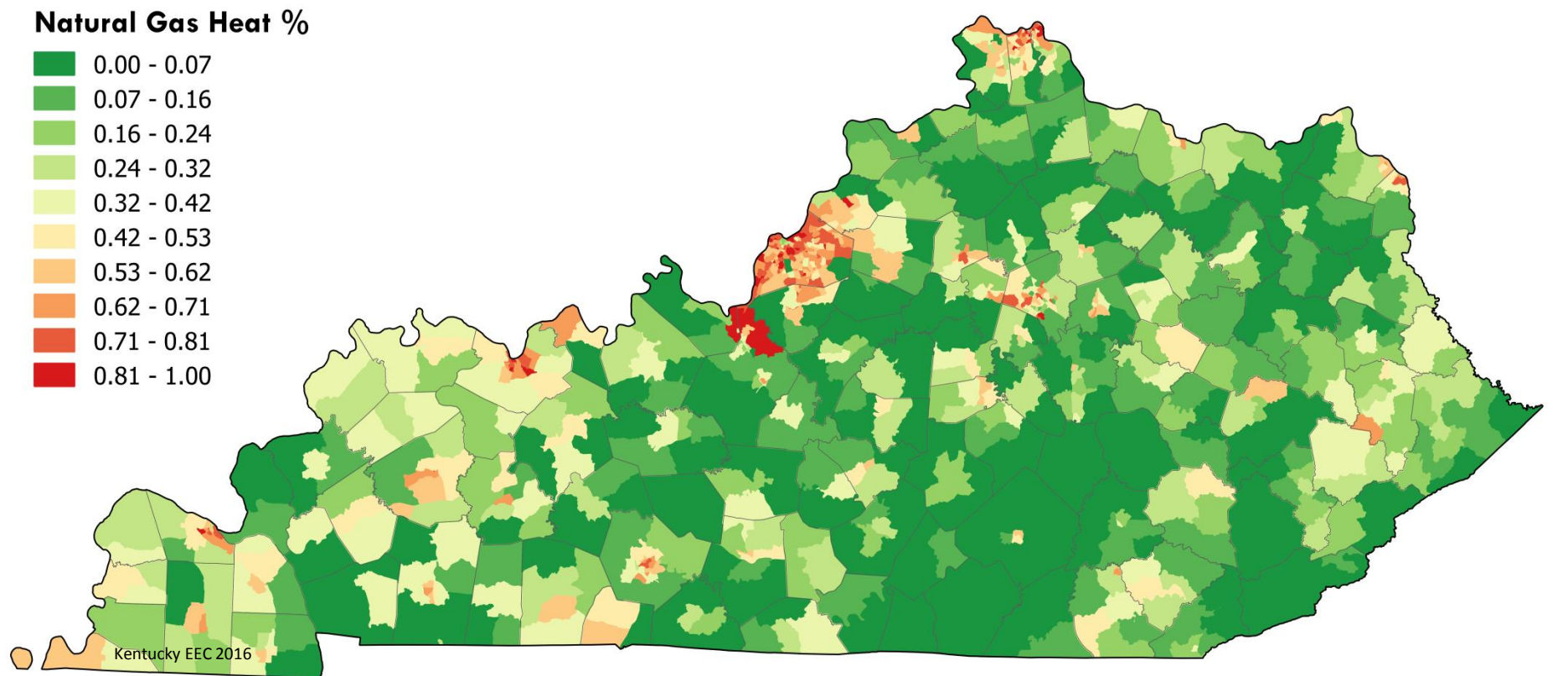
# Kentucky Homes Heating with Electricity, 2014



Kentucky Energy Database, EEC-DEDI, 2016

859,587 (50.5%) of Kentucky Families Heat with Electricity

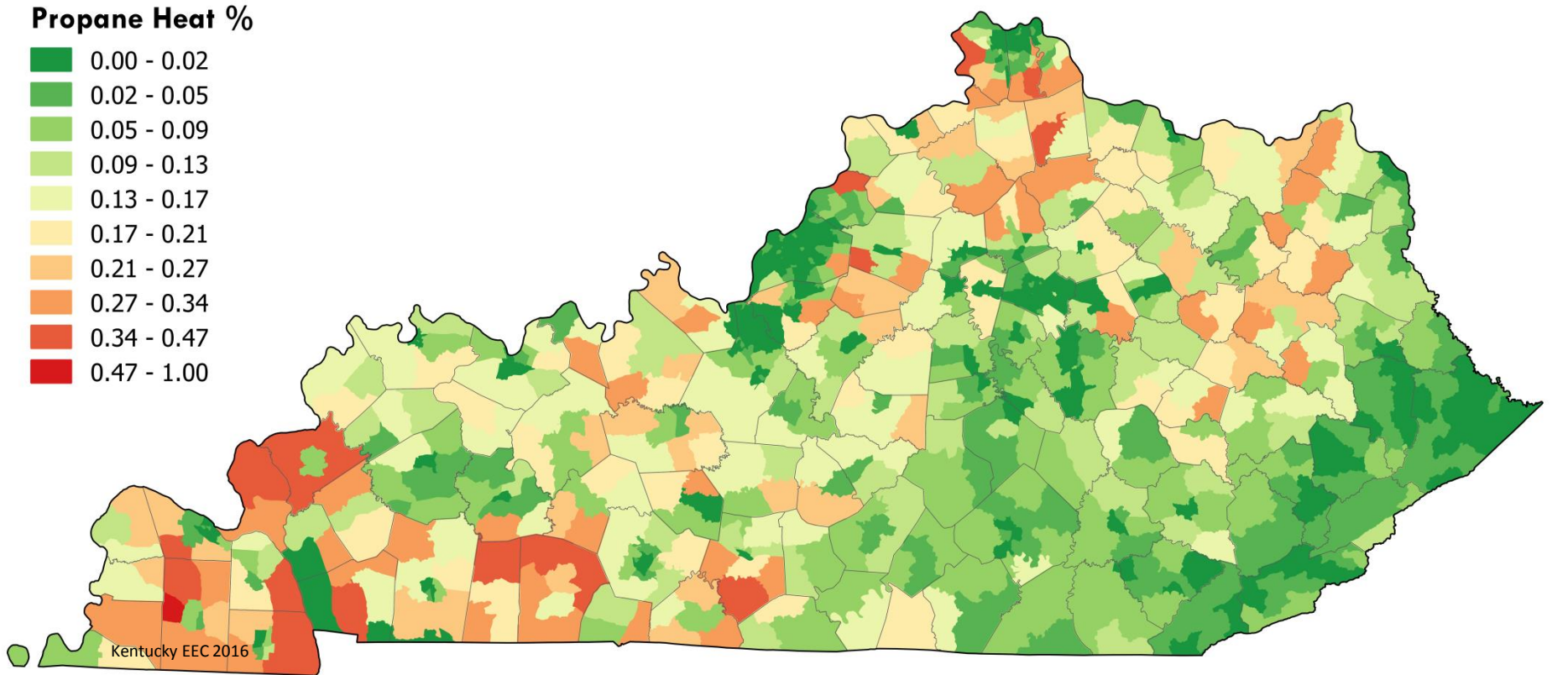
# Kentucky Homes Heating with Natural Gas, 2014



Kentucky Energy Database, EEC-DEDI, 2016

650,672 (38%) of Kentucky Families Heat with Natural Gas

# Kentucky Homes Heating with Propane, 2014

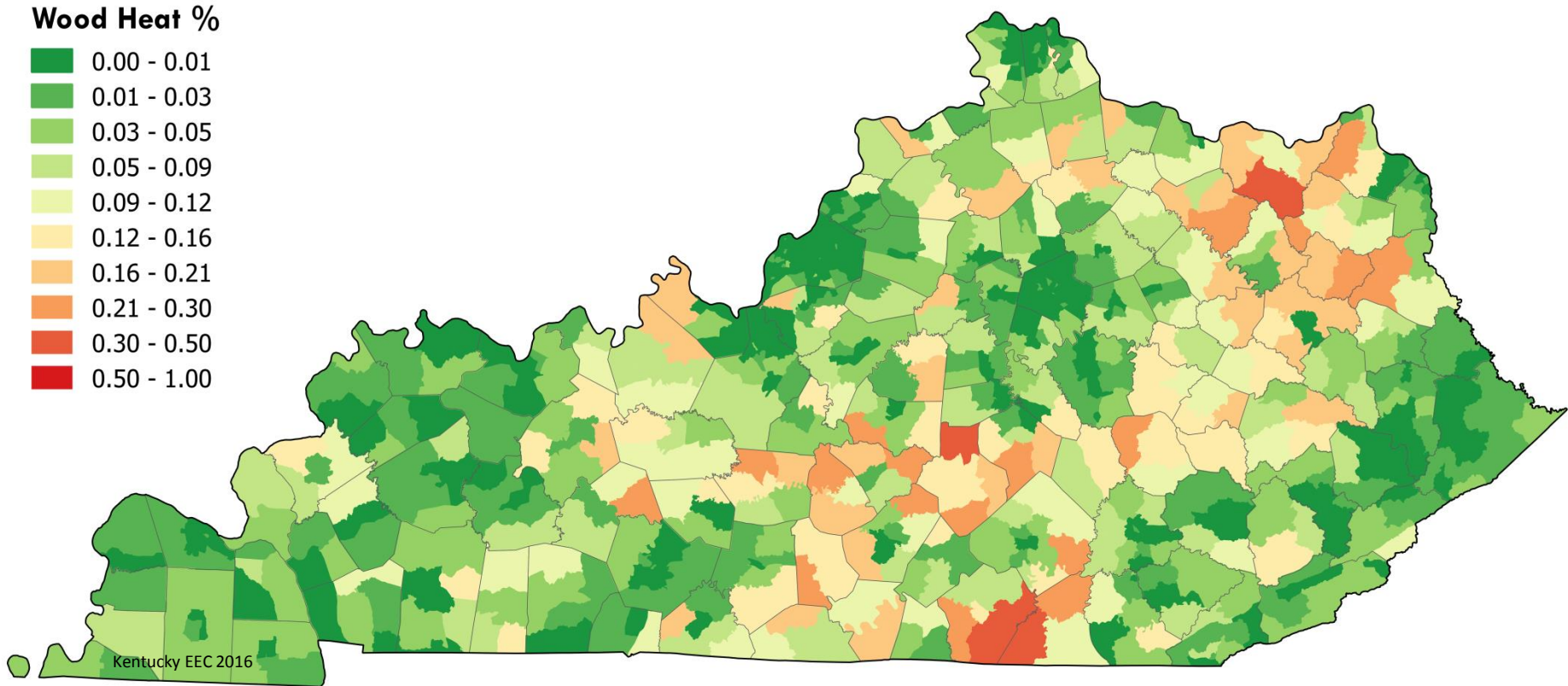


Kentucky Energy Database, EEC-DEDI, 2016

50,270 (6.5%) of Kentucky Families Heat with Propane



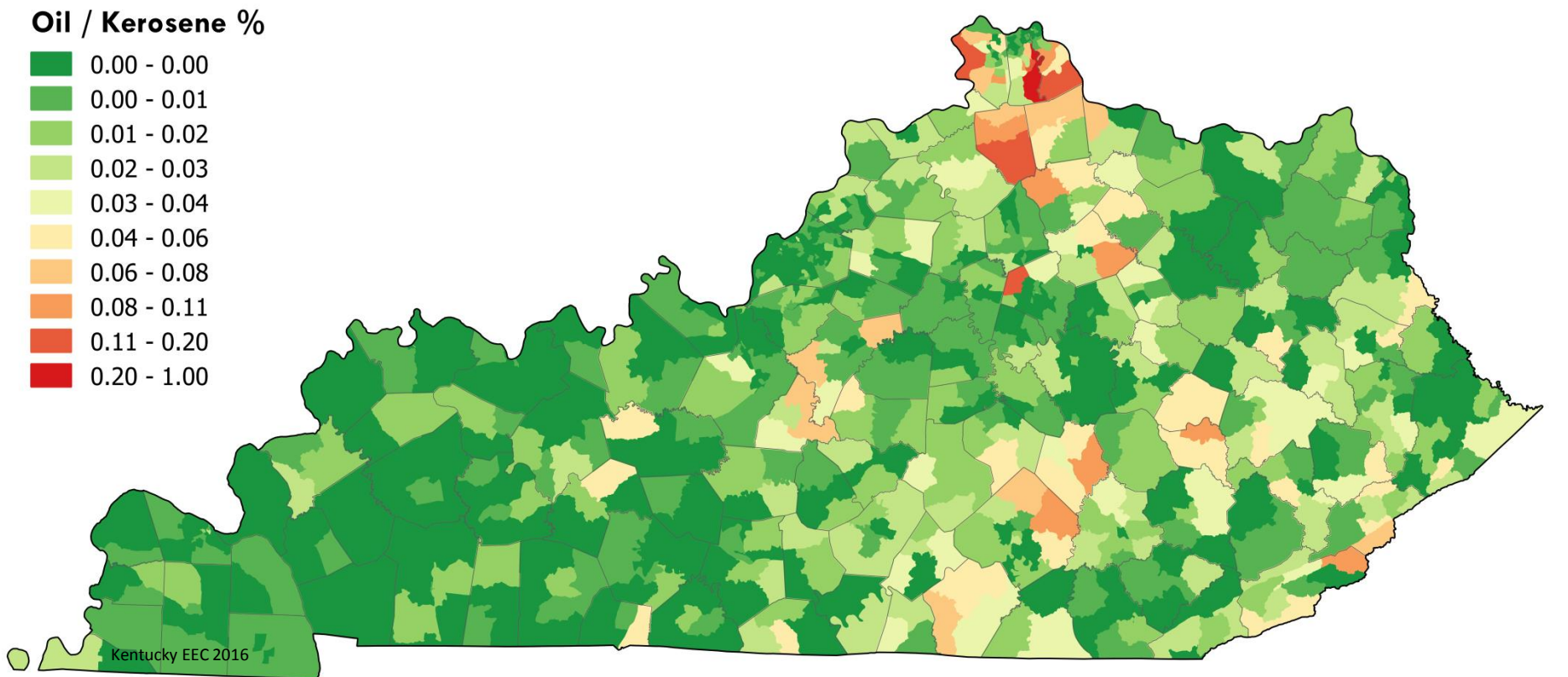
# Kentucky Homes Heating with Wood, 2014



Kentucky Energy Database, EEC-DEDI, 2016

50,270 (2.9%) of Kentucky Families Heat with Wood

# Kentucky Homes Heating with Fuel Oil or Kerosene, 2014

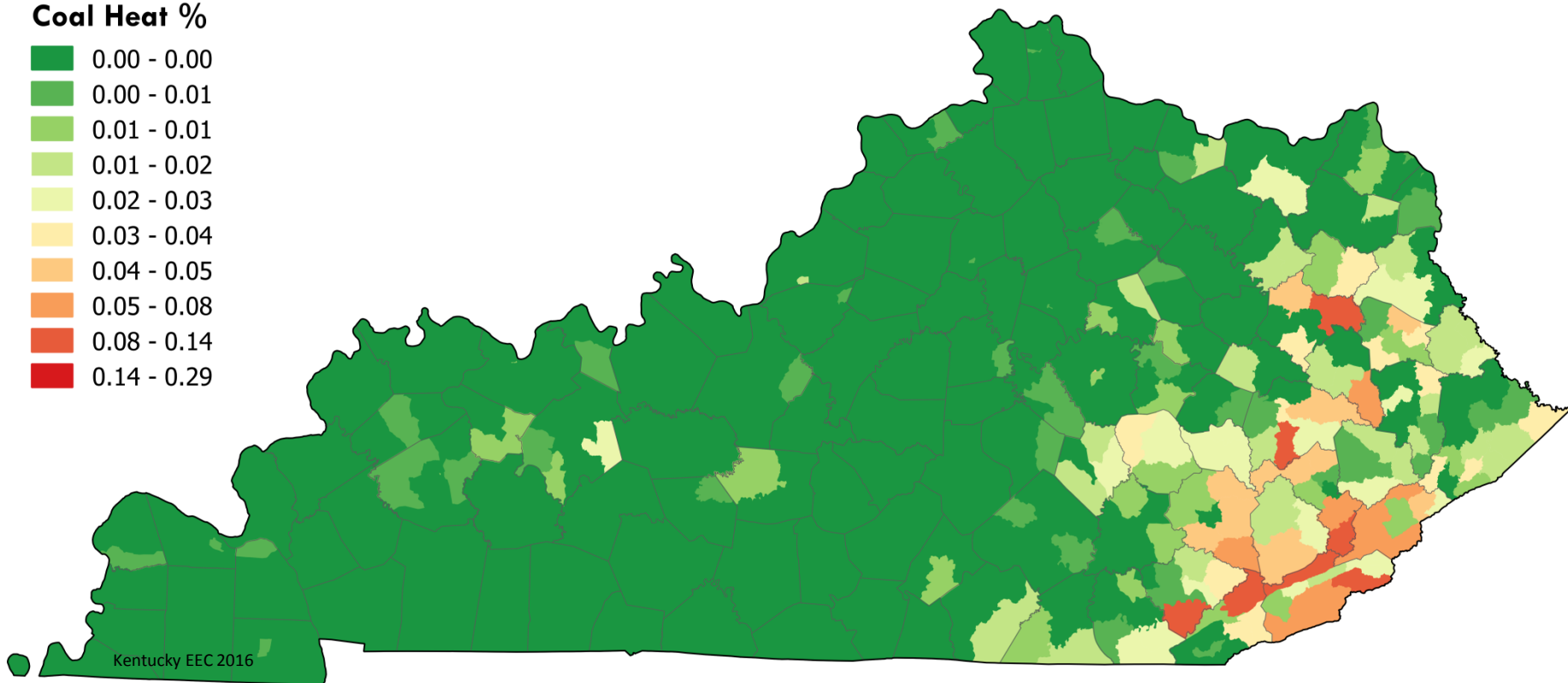
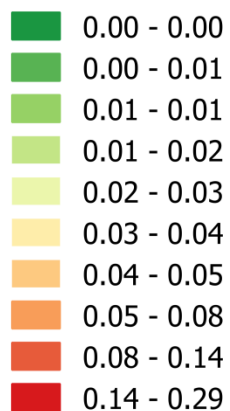


Kentucky Energy Database, EEC-DEDI, 2016

17,504 (1%) of Kentucky Families Heat with Fuel Oil or Kerosene

# Kentucky Homes Heating with Coal, 2014

## Coal Heat %

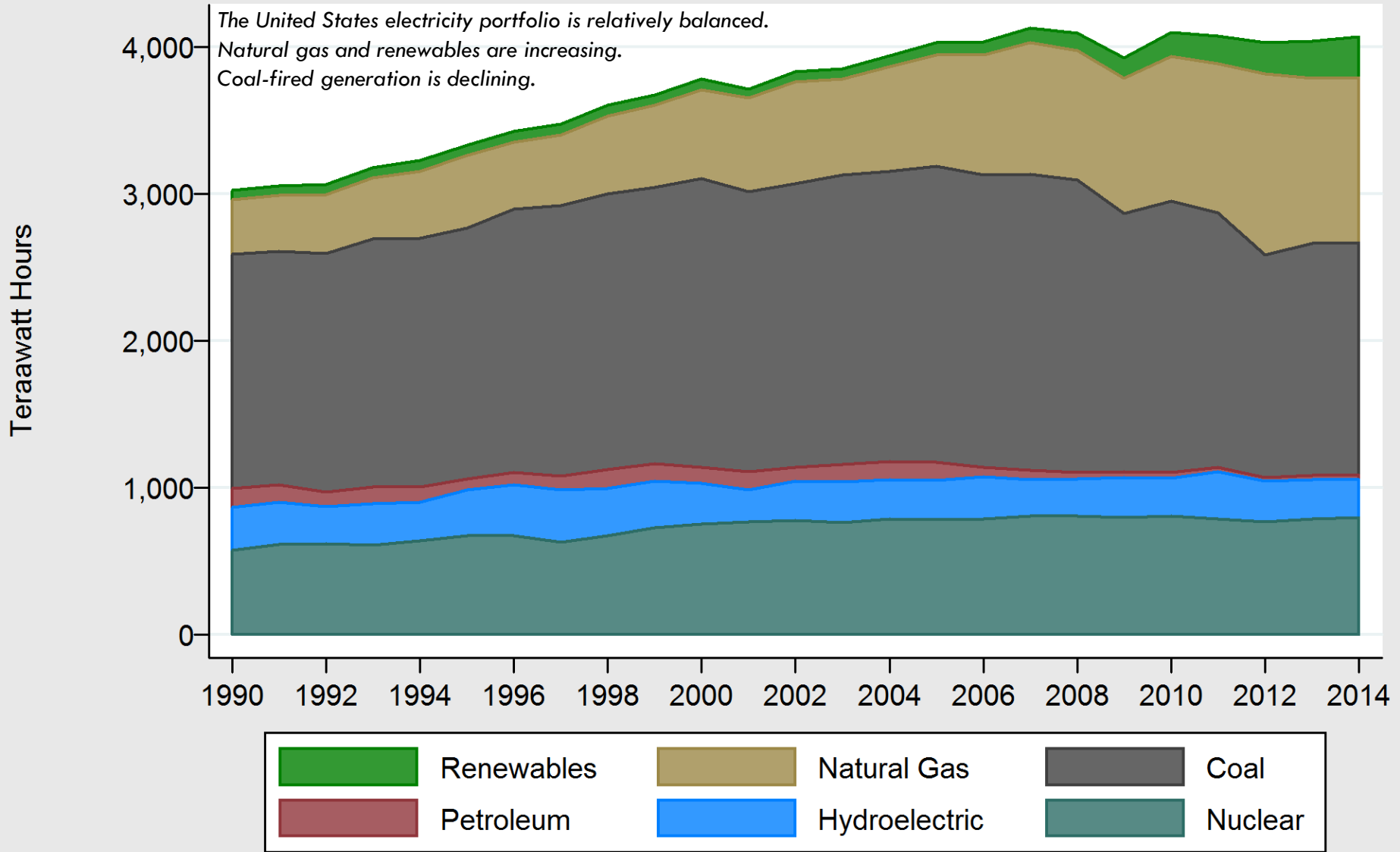


Kentucky Energy Database, EEC-DEDI, 2016

4,317 (0.3%) of Kentucky Families Heat with Coal



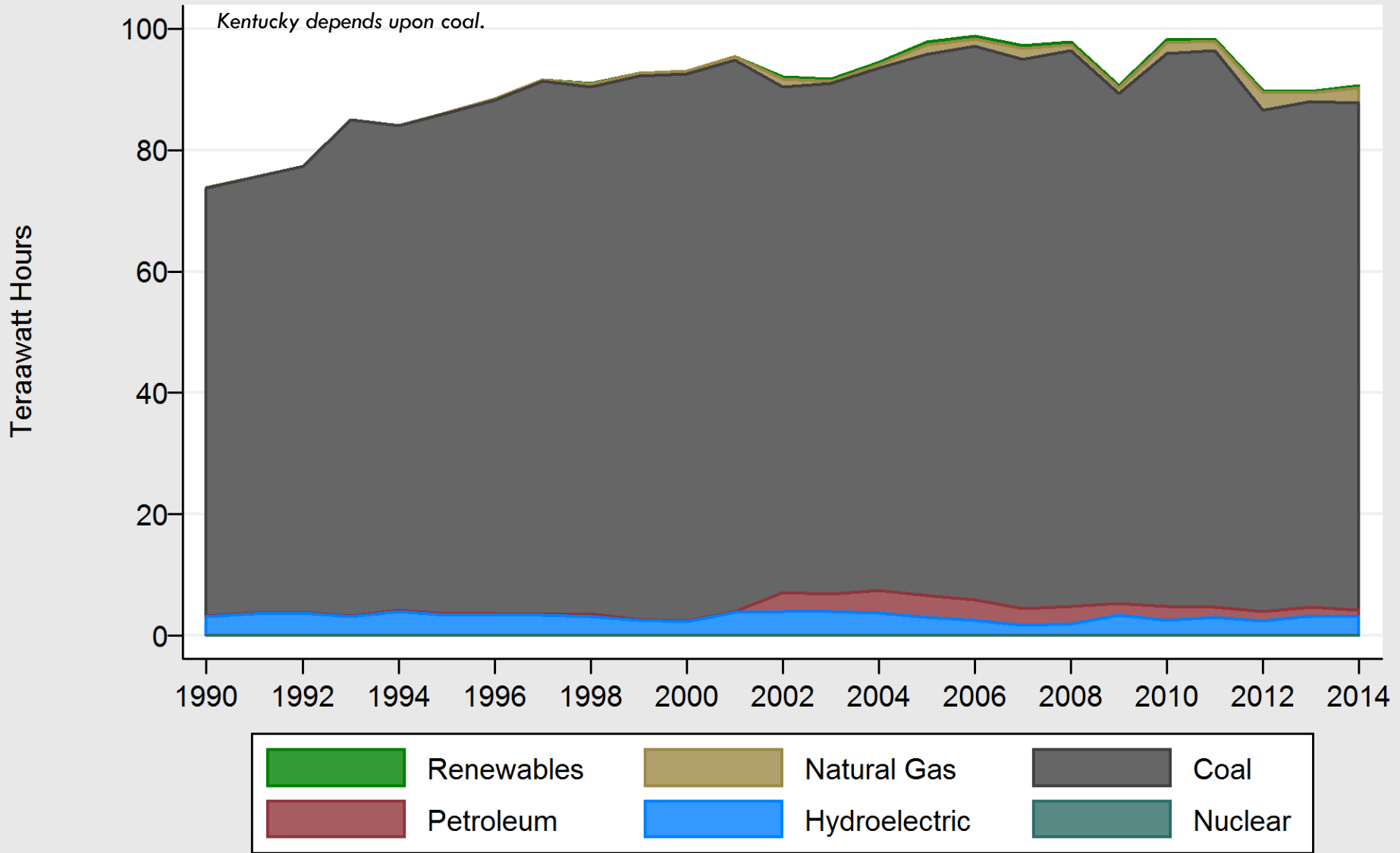
# United States Electricity Generation by Fuel, 1990-2014



Kentucky Energy Database, EEC-DEDI, 2015

Data Source: EIA Electric Power Annual

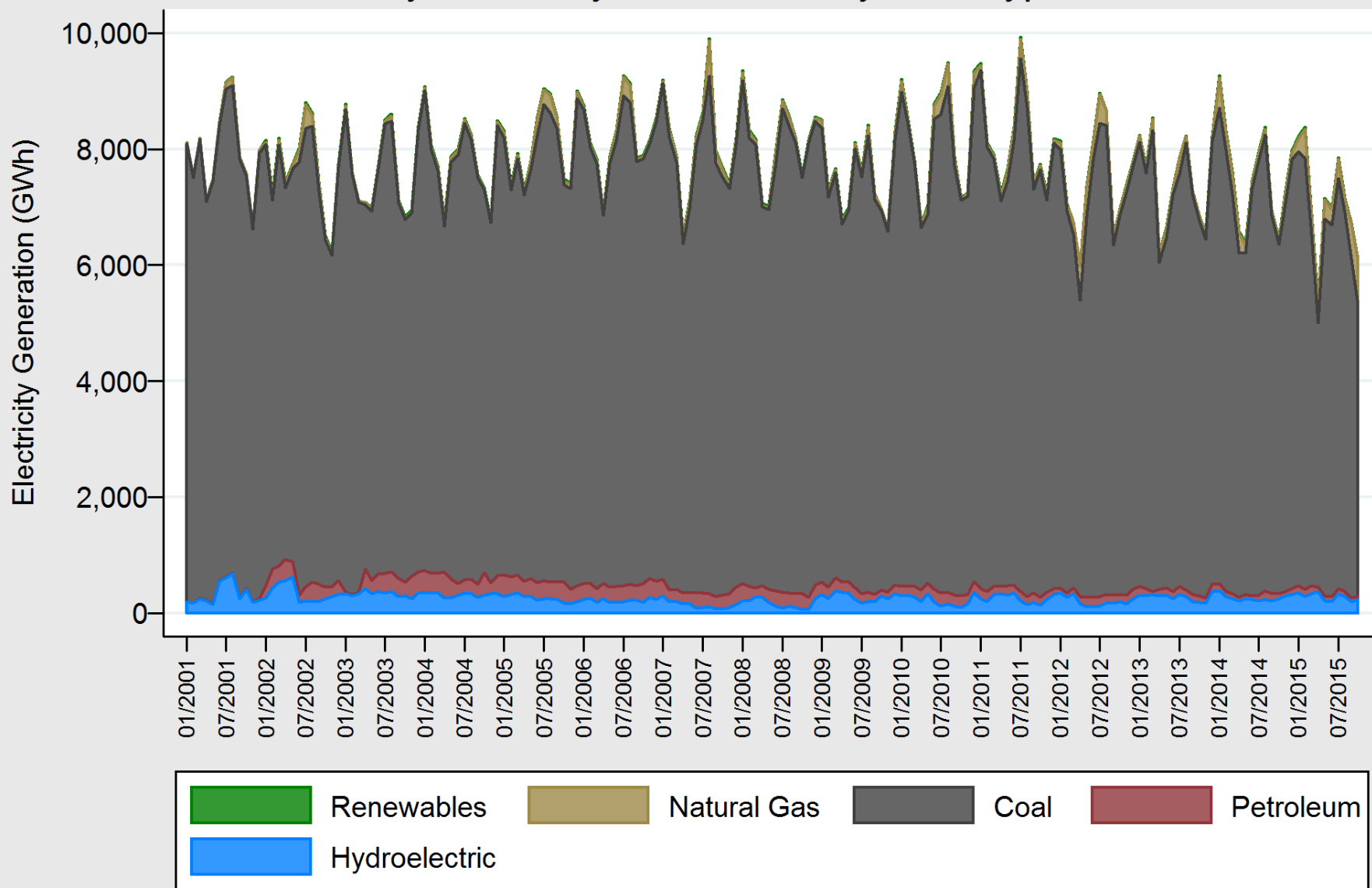
# Kentucky Electricity Generation by Fuel, 1990-2014



Kentucky Energy Database, EEC-DEDI, 2015

Data Source: EIA Electric Power Annual

## Kentucky Electricity Generation by Fuel Type, 2001-2015



Kentucky Energy Database, EEC-DEDI, January 2016

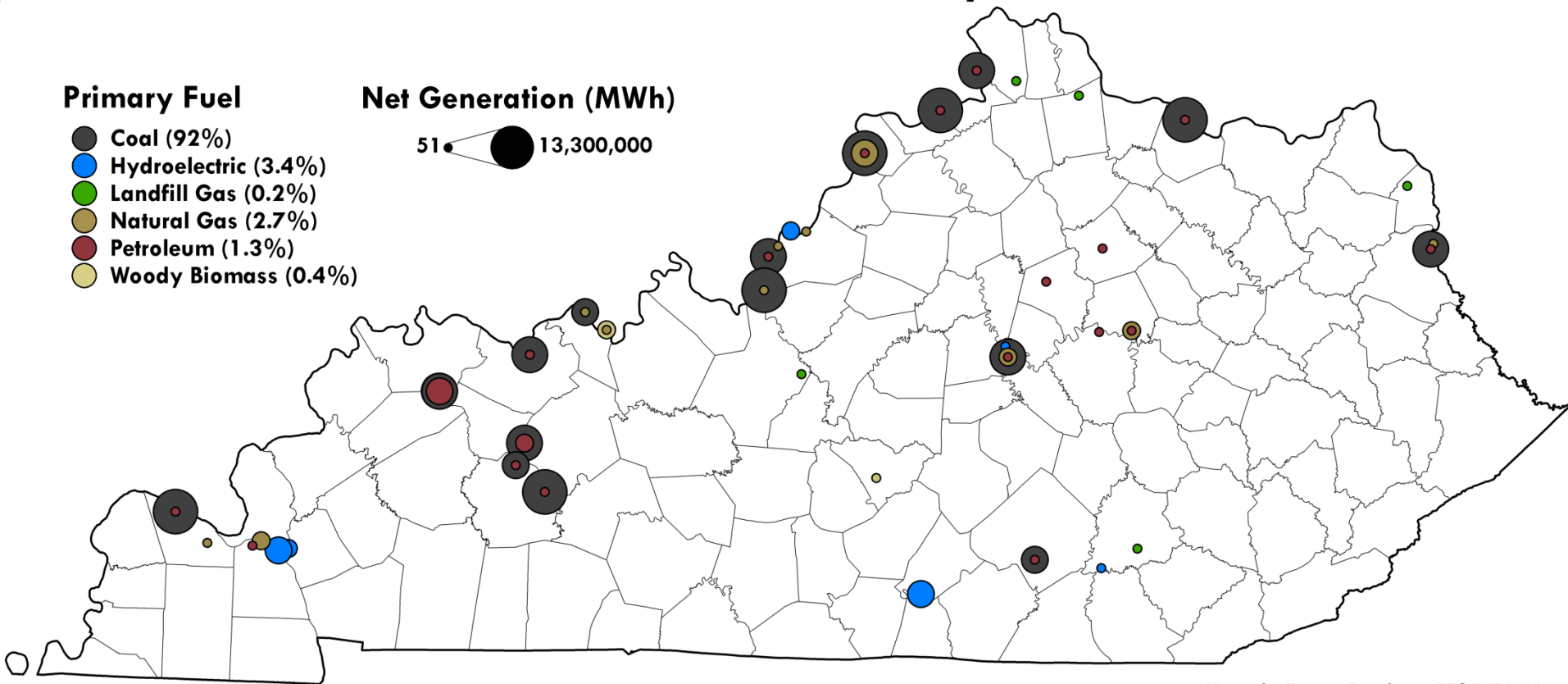
# Power Plants in Kentucky, 2014

## Primary Fuel

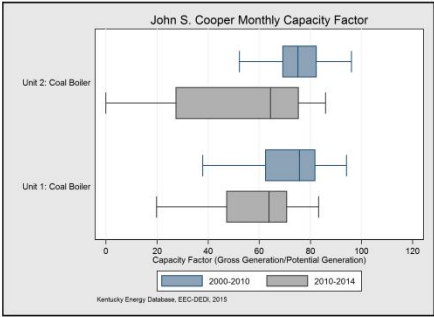
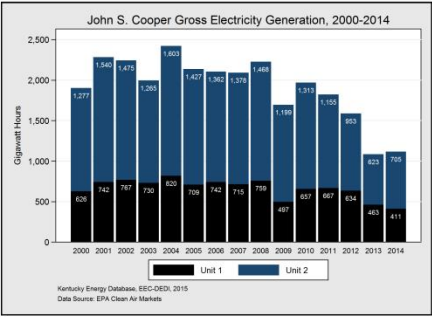
- Coal (92%)
- Hydroelectric (3.4%)
- Landfill Gas (0.2%)
- Natural Gas (2.7%)
- Petroleum (1.3%)
- Woody Biomass (0.4%)

## Net Generation (MWh)

51 ● 13,300,000



# John S. Cooper Power Station



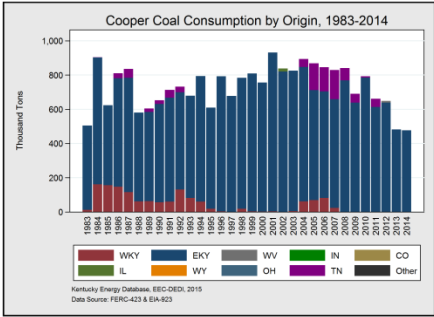
Unit Number	Online Year	Retire Year	Fuel	Capacity (MW)	Capacity Factor* (%)	Gross Generation* (GWh)	Net Generation* (GWh)	CO <sub>2</sub> Rate* (lbs./MWh)	SO <sub>2</sub> Rate* (lbs./MWh)	NO <sub>x</sub> Rate* (lbs./MWh)
Plant	1965		Coal	341	37%	1,116	1,030	1,777	7.75	1.55
1	1965		Coal	116	40%	411	381	1,787	13.04	2.27
2	1969		Coal	225	36%	705	649	1,772	4.66	1.12

The John Sherman Cooper Power Station, located in Pulaski County, is 50 years old and consists of two coal-fired electricity generating units. The units came online in 1965 and 1969, respectively. The plant has a total nameplate capacity of 341 MW. In 2014, the plant generated 1.1 GWh of electricity and had a plant-wide capacity factor of 37 percent. A scrubber was installed on unit 2 in 2012 to lower sulfur dioxide emissions and a baghouse. Unit 1 is in the process of being tied into the Unit 2 controls. Cooper sourced all of its coal from eastern Kentucky in 2014 from Perry, Leslie, Bell, Estill, Rockcastle, and Knox counties. John S. Cooper Power Station is owned and operated by [East Kentucky Power Cooperative](#). Photo courtesy of EKPC.

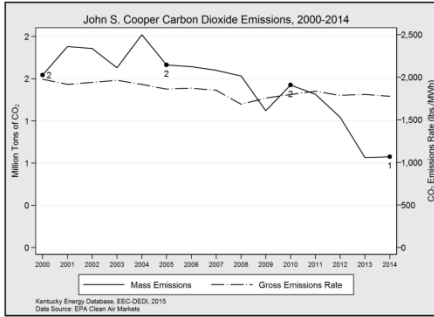
\*2014



# John S. Cooper Power Station

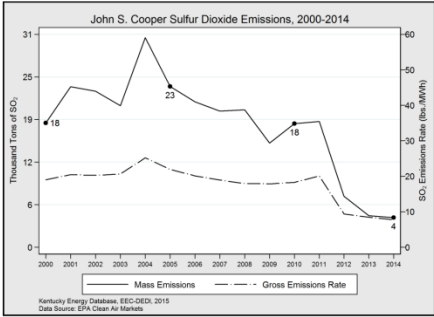


State	2014 Tons	Percentage
Total	477,513	100%
Eastern Kentucky	477,513	100%



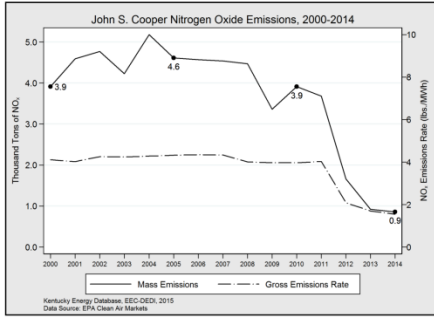
Carbon Dioxide	2014 Value	Since 2000
Emissions (Tonnage)	991,943	-47%
Rate (lbs./MWh)	1,777	-10%

The John S. Cooper Power Station emitted 992 thousand tons of CO<sub>2</sub> in 2014, a decrease of 47 percent from 2000 levels. The rate of CO<sub>2</sub> emissions decreased by 10 percent during that period and is the lowest of all Kentucky coal plants.



Sulfur Dioxide	2014 Value	Since 2000
Emissions (Tonnage)	4,324	-76%
Rate (lbs./MWh)	7.75	-59%

The John S. Cooper Power Station emitted 4,324 tons of SO<sub>2</sub> in 2014, a decrease of 76 percent since 2000. The rate of SO<sub>2</sub> emissions reduced by 59 percent during that period.

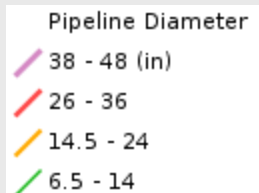


Nitrogen Dioxide	2014 Value	Since 2000
Emissions (Tonnage)	863	-78%
Rate (lbs./MWh)	1.55	-62%

The John S. Cooper Power Station emitted 863 tons of NO<sub>x</sub> in 2014, a reduction of 78 percent since 2000. The rate of NO<sub>x</sub> emissions decreased by 62 percent during that period.

# Map of Kentucky Natural Gas Transmission Infrastructure, 2016

*Confidential information has been deleted. Please direct all inquiries to 502-564-7192.*



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# Map of Kentucky Electricity Transmission Infrastructure, 2016

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